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SECRET

Engineer INTELLIGENCE

BULLETIN NO.1

ENGINEER SECTION

HQ.EIGHTH ARMY

APRIL 1945

SECRET

SUBJECT: Engineer Intelligence

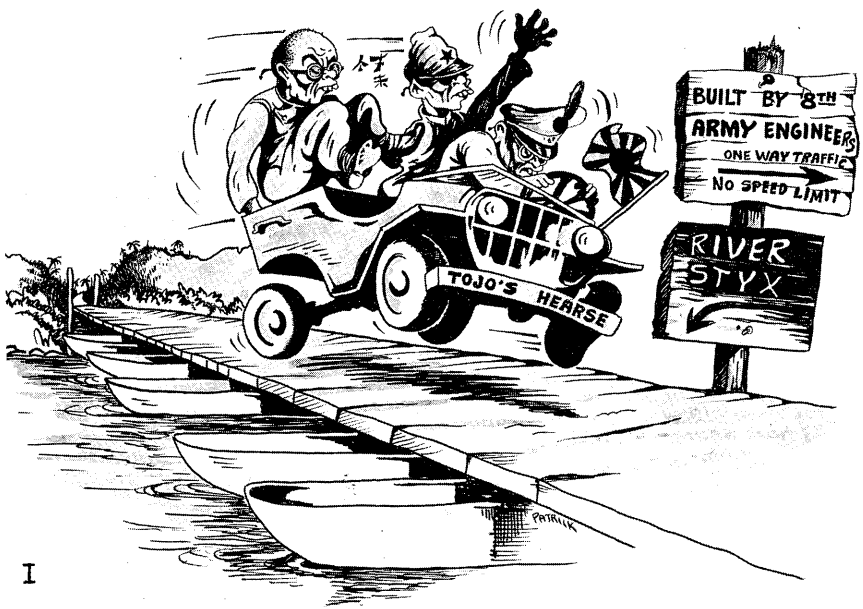
TO : All Concerned

Engineer intelligence is of immediate interest and importance to all engineer personnel. A thorough knowledge of current enemy engineer means, methods, and material is necessary for efficient accomplishment of most engineer missions. Similarly, the many useful construction expedients and short-cuts discovered and developed from time to time by units and individuals should be made common knowledge.

The Eighth Army Engineer Intelligence Bulletin is a compilation of recent developments in engineer material, methods, and equipment, both friendly and enemy, gathered from operational areas in this theater. Its sole purpose is to provide engineer personnel with current intelligence data for their future use and application. It is not intended to duplicate or disseminate information already contained in available War Department and Theater intelligence publications.

Since this bulletin can only be of value if fresh, up-to-date operational intelligence is made available, your cooperation by submitting promptly any new developments which come to your attention is earnestly solicited.

THE ENGINEER
Eighth Army



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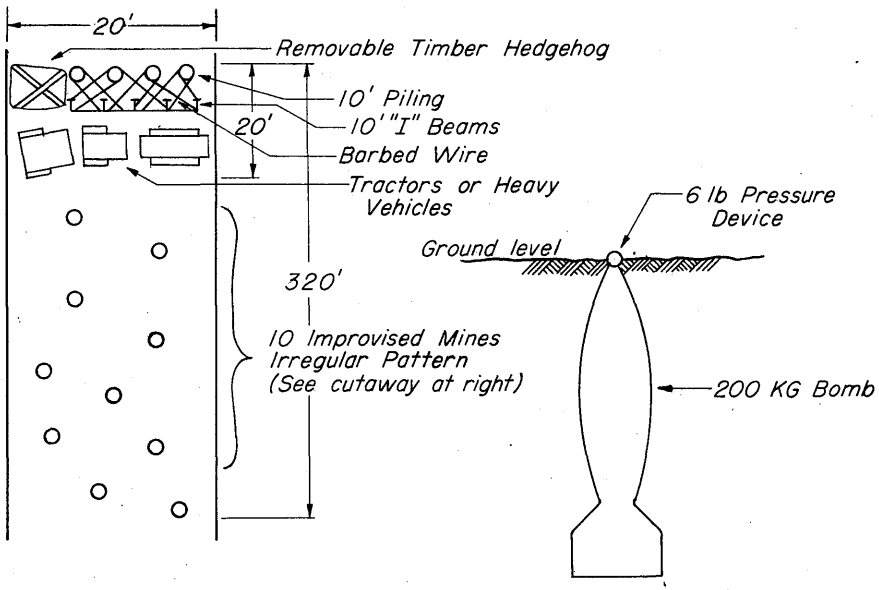
JAPANESE PROGRESS IN DEFENSIVE WARFARE

From the time of their invasion of China, through the initial phases of their offensive after Pearl Harbor, the Japanese concentrated on development of offensive tactics and technique. Since Guadacanal and Buna forced them into a defensive phase in this theater, there has been a gradual development in their defensive tactics and techniques, until on Luzon they have finally started to use mines on a large scale, to execute effective barrier plans by demolishing bridges, and to resort to the extensive use of mines and massive obstacles incorporated into fortifications.

To date, Japanese use of mines and other engineer defensive measures often has been inapt, but their proficiency is improving with practice. It is certain that as we progress into the heart of the Japanese Empire, the Engineer will become more and more concerned with passage of Japanese obstacles and with the assault of fortified localities. Japanese defenses progressively will become more deliberate and the engineer elements of his defense will become more refined and more effective.

A JAPANESE ROAD BLOCK

The road block sketched below was used by the Japs in the Southern Luzon Campaign. It was located 250 yards north of a river bridge and can be considered a typical road block. The bridge, across the Paranque River, had been partially demolished.



Variations of such a block may consist of one or more of the following:

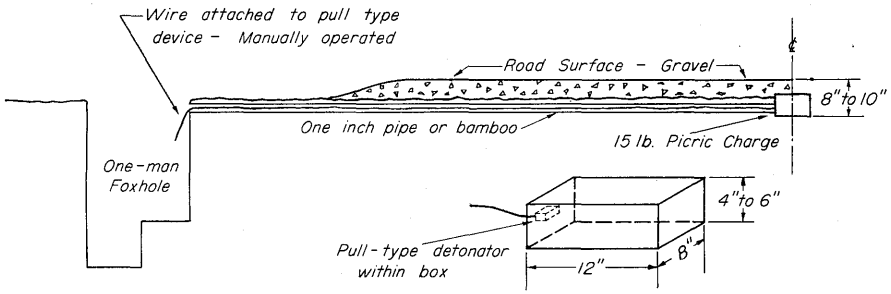
a. Mines may extend off the road into shoulders and side streets.

b. Barbed wire may be strung with AP mines.

c. The block may be covered with AT and automatic weapons emplaced in pillboxes or entrenchments.

THIS IS A NEW METHOD OF MINING A ROAD

It was used several times in the Southern Luzon campaign by the Japs, but no damage or casualties were reported.

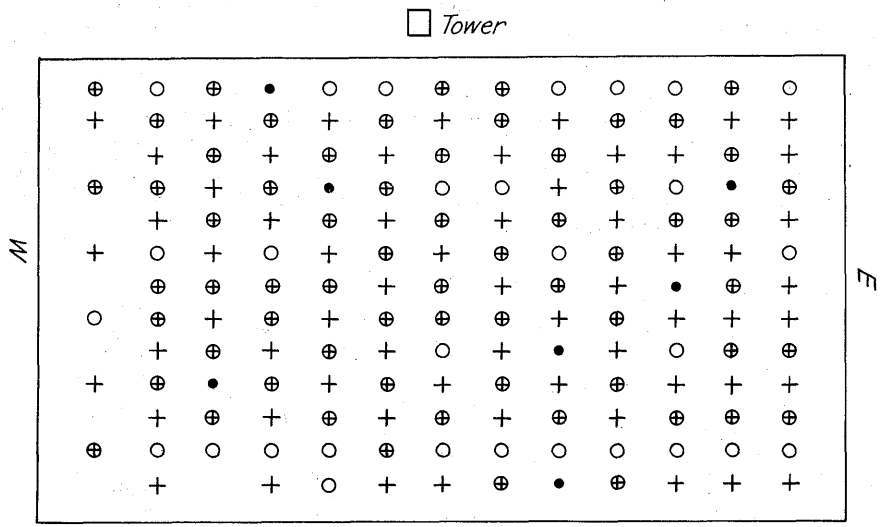


This type of road mine showed ingenuity but camouflage was generally poor.

The Japs intended these controlled mines for use against tanks. In one instance, many 2½ ton 6 x 6's and foot troops passed over a particular mine, but the Jap soldier died still waiting for a tank to come along.

CASTELLEGOS AIRSTRIP MINED BY JAPS

Three days prior to "D" day of the Subic Bay (Luzon) operation, guerilla forces, by continuous harassing fire, drove three truck loads of Japs out of the airstrip area. They found the strip mined with a total of 166 aerial bombs from 15 Kg. up to 250 Kg., buried with the noses up and protruding approximately 8 inches above the ground. (See sketch below). No attempt had been made to camouflage the bomb mines nor where any of them fused. This may have been due either to lack of time or to a shortage of bomb fuzes.



This sketch not drawn to scale

Average interval between mines was two meters

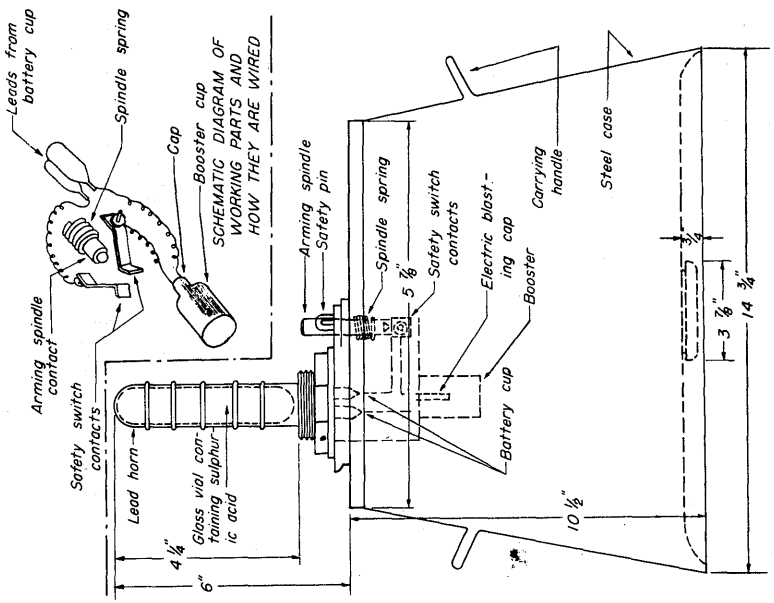
7	each	250 Kg	marked •
28	"	100 Kg	" ○
64	"	50 Kg	" +
62	"	15 Kg	" ⊕

NEW JAPANESE SINGLE-HORN BEACH MINE

A conical thirty pound beach mine used as a road mine was encountered in the Southern Luzon Campaign. Available sketch and description indicate that it is a variation of the beach mine described in paragraph 111.05, Change Number 12, FM 5-31, Land Mines and Booby Traps, dated 13 January 1945. Although information is not detailed enough to be conclusive, it appears that the firing mechanism and booster assembly probably is identical to that described in FM 5-31, while the main body is smaller. FM 5-31 dimensions for the mine body are 16 1/8 inch diameter at the base and 14 1/4 inches height, with a weight of 68 pounds. The new mine is reported as being 14 3/4 inches across the base, 10 1/2 inches in height, and 30 pounds in weight.

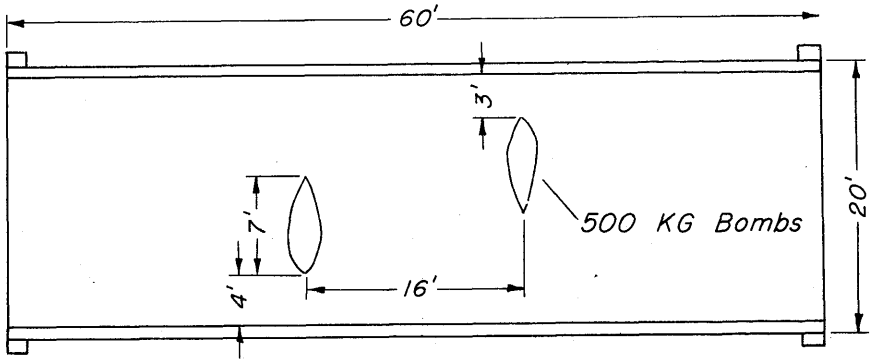
The mine should be destroyed in place if practicable. If necessary to defuse it, the method described in FM 5-31 should be followed carefully.

Use of this mine as a road mine confirms similar reports from the Central Pacific Area. It may be expected that it will be used extensively in the same manner in the future. In the past the mine commonly has been buried in the road bed with the horn extending above the surface.

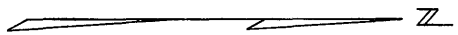


The two following sketches of Japanese concrete bridge demolitions are self explanatory.

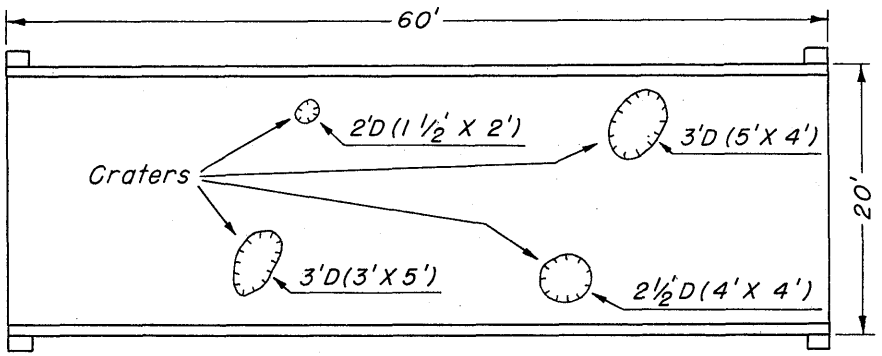
Imus Bridge



REMARK:- Bridge was made secure before party could fuse bombs and complete demolition



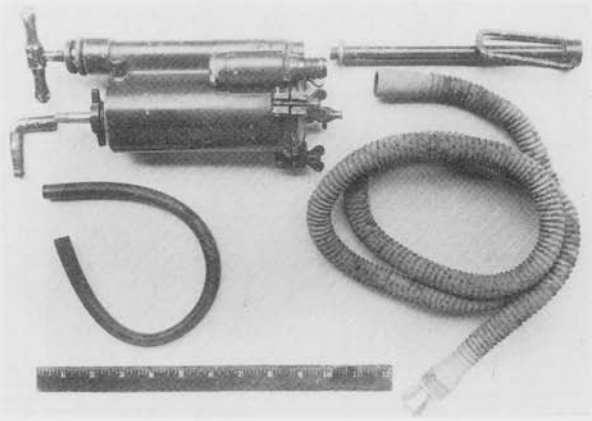
Las Pinas Bridge



REMARKS:- Charges were fired but were not sufficient to destroy the bridge

The Jap hand operated water filter (see photo below) and other Japanese water purifiers using the ceramic candle principle are being found in some quantity. They should not be used by allied troops for purifying water for their consumption without proper chlorination. Infinitesimal cracks, which cannot be seen by the naked eye, often occur in the ceramic filters, allowing the passage of bacteria.

Completely Assembled Unit
(Note Extension)



Individual Water Purification Unit

TEMPORARY LST JETTY

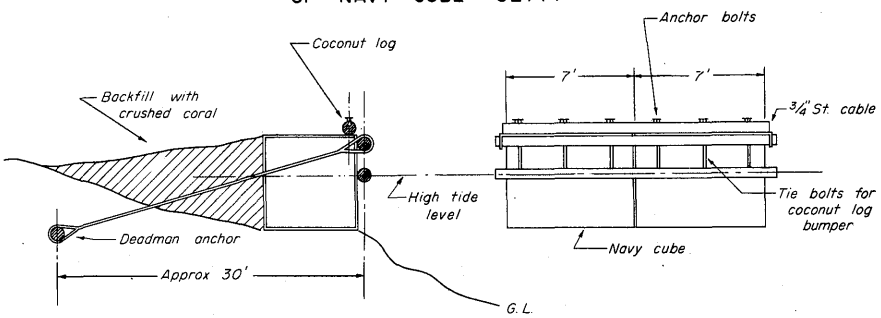
LST jetties were required to load out an Infantry Division at Morotai. This project was assigned to the 1059th Engineer Port Construction and Repair Group.

Investigation at the proposed LST jetty sites revealed such a rough surf that coral or sand jetties could not be used. It further developed that the coral was of such a hard nature that piles could not be driven. In view of these considerations, a can jetty was designed that satisfactorily handled the LST loading out.

The construction consisted of joining cubes parallel to the surf's edge at low tide for an approximate distance of 150 yards. The cubes were filled with sand and were anchored by deadmen placed approximately 30 feet on the shore side. A loading platform leading to the can jetty was prepared by back-filling with coral (see sketch below).

This improvised jetty cannot be used as a permanent installation because in time the heavy surf action undercuts the sand base of the cubes. The deadmen were connected to the cubes by steel cable rather than manila rope; steel cable was all that was available. Manila rope would have been better if obtainable, because of its elastic properties and consequent lesser tendency to break under surf conditions.

TYPICAL DOUBLE SECTION
OF NAVY CUBE JETTY



Cubes to be filled with sand and set on beach at shore line during low tide

The 302d Engineers had a bridge to build that entailed the placing of bents in a stream with a mud floor. This mud floor had no bottom and the regular type shoes would not hold. The shoe illustrated below in the photograph was developed as an expedient and used effectively in this 35-ton bridge. The bridge is subject to constant traffic and the shoes are holding well.

REPLACEMENT OF BRIDGE WITH MINIMUM INTERRUPTION OF TRAFFIC

One of the missions assigned to an engineer combat battalion included replacing a bridge on the MSR with minimum interruption of traffic. The new bridge was constructed on the bank beside the existing bridge. It consisted of a single span assembly of stringers and decking. During the night the existing bridge was removed and new bridge seats placed. Then the new bridge was lifted into place by two cranes, one placed on each bank. This procedure reduced traffic delay on this important road to less than three (3) hours.

PLACEMENT OF INTERMEDIATE TIMBER BENTS TO REINFORCE SMALL BRIDGES

The following method for placing intermediate timber or log bents under existing bridges for strengthening has been developed. Use of the method insures a level bent, places the footings on a firm bottom and minimizes future settling of the bent. Experience indicates that this method is often faster and easier than fabricating a complete bent, then carrying it out and placing it in the desired location.

Construction Procedure:

Cut two heavy timbers or round logs the desired length of the bent sill and join as illustrated in figure 1, below. If round logs are used, cap with recessed transverse timbers to provide suitable bases for posts. If the character of the bottom indicates the need, mud sills may be added. Set dowel pins in sill to receive posts as shown in figure 1.

Cut the timber to be used as the cap to length and secure firmly in its final position by lashing to the bottom of the stringers.

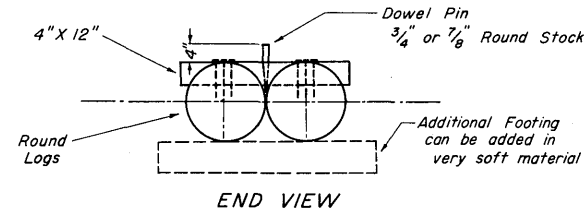
Place the prepared sill in position, then block two or more 12 ton hydraulic jacks in position to jack against cap and sill (see figure 2). These must be placed clear of positions selected for the posts.

Park a piece of heavy equipment over the temporary bent and jack the sill down until it refuses to yield and the cap is level at the desired height.

Cut posts to length individually by accurately measuring distance, cap to sill, at final location of respective posts. Drill posts to receive the dowel pins in the sill.

Over-jack the cap to allow dowel pins to be installed in posts, place posts, and remove jacks. Scab posts to cap. If the stringer system will not stand sufficient over-jacking to allow insertion of dowel pins, use scabbing at the sill instead of dowel pins.

"MUDDER" OR FOOTING



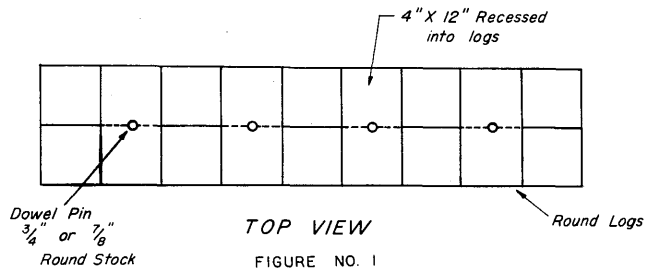
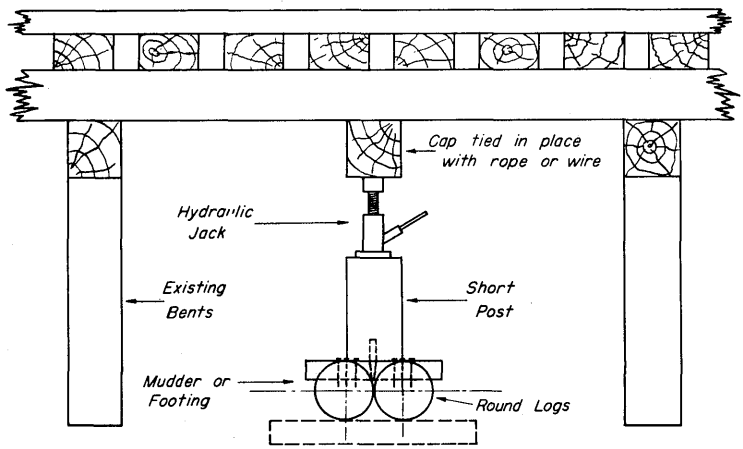


FIGURE NO. 1

"METHOD OF ASSEMBLY"



NOTE:- Have piece of heavy equipment park over tied cap, then jack mudder in place until it refuses to yield

FIGURE NO. 2

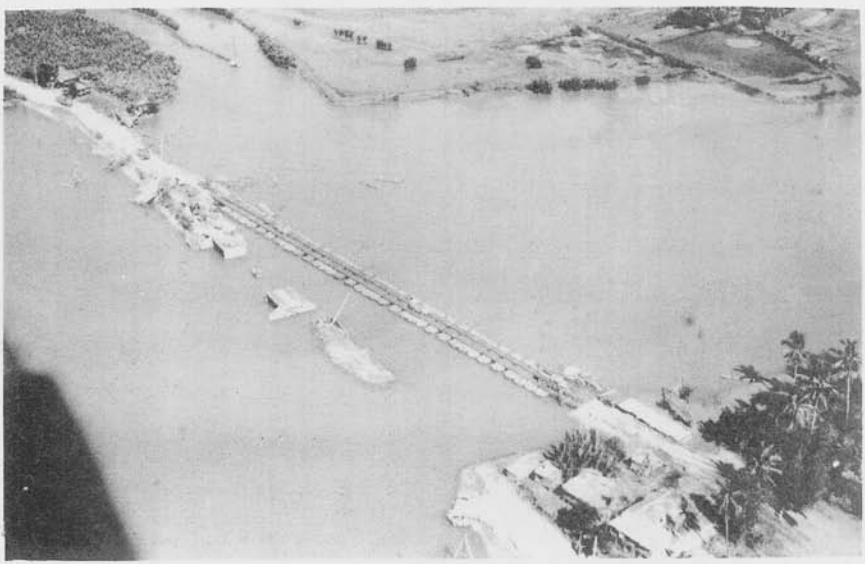
Engineer Photographs

The 11th Airborne Division looks at Manila from Paranaque

Typical Camouflaged Jap Cave Stotsenberg Area Luzon (Camouflage disarranged by fire)

Result of Jap demolition of Bridge over BALIWASAN River, looking northwest. Repairs were effected by dumping river gravel to fill the break and using remaining span to carry the river flow.

Constructing LST Ramps at Tarragona.



Treadway bridge over Calmay River on Hwy 13, Luzon

This waterpoint at San Jose installed by the 170th Engineer Combat Battalion is typical of water points on the east coast of Leyte.

A 271 foot Ponton Trestle Bridge built over the Daguitan River south of Burauen, Leyte.

A 450 foot pile bridge under construction over the Marabang River on the east coast of Leyte.

The same bridge completed, and, after a flash flood hit it two weeks later.

387 foot pier at Abuyog.

Pile bridge with tread and center curbing.

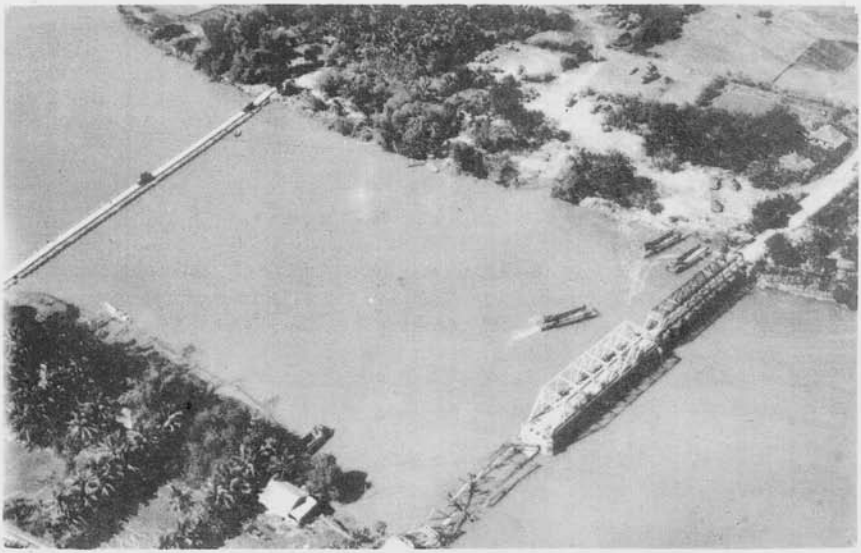
Corduroy road with beach sand surface.

200 foot Bailey Bridge over Bito River.

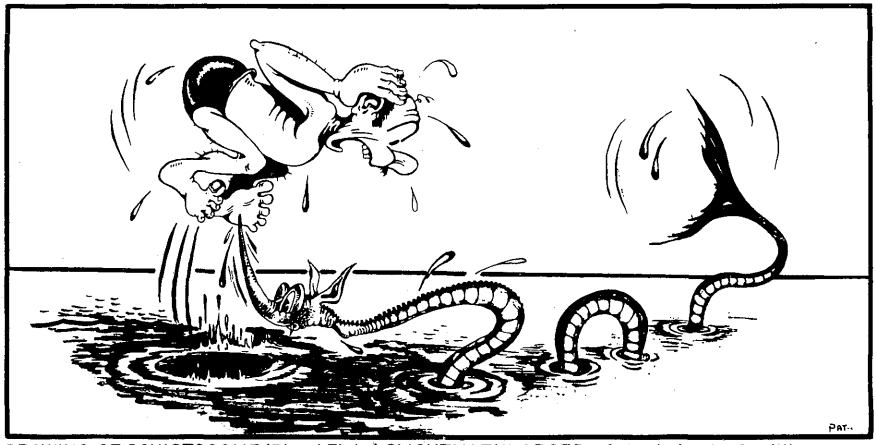
Replacing a 80 foot Bailey Bridge with a timber trestle bridge with minimum interruption of traffic. There was a total delay to traffic of only 4 hours.

Pontoon dock at Abuyog.

Infantry support raft ferry - Luzon Operation



LCM Ferry and Treadway Bridge over Agno River - Luzon



DRAWING OF SCHISTOSOME (Blood Fluke) SLIGHTLY ENLARGED *Actual size 1 to 2 millimeters*

Since the return of our army to the Philippines the Schistosome, a type of blood fluke, has emerged as a dangerous enemy of military personnel and particularly of engineer troops. Engineers are subject to abnormal exposure to the parasite because of their activities in building bridges and fords across infested fresh water streams.

Section II, Circular Number 17, Headquarters Eighth Army, dated 20 January 1945 directs precautionary measures to be used They should be followed implicitly.

The Army Surgeon recommends the following specific precautionary measures for engineer troops:

a. Determine, if possible, from medical sources whether or not fresh water in the general area is infested with the fluke If there is any doubt, consider any fresh water infested. All fresh water on Leyte, Samar, Mindanao and Luzon should be considered dangerous until receipt of authoritative information to the contrary.

b. Design construction procedures so that a minimum number of personnel must get into the water.

c. Thoroughly acquaint your men with the danger of this fluke and provide for maintaining "keep out of the water" discipline at the job site.

d. If available, use hip boots and rubber boats to prevent the fluke from reaching the skin.

e. When it is necessary to put men into the water, provide means for and require the taking of thorough soap baths immediately after immersion. Water which has been hyperchlorinated to 5 parts per million residual chlorine should be used for this purpose. It is also important to stress the necessity of thoroughly washing the hands and arms by those personnel who have had only these portions of the body exposed to the water.

The importance of the blood fluke to you and your unit is illustrated by the experience of one engineer battalion on Leyte, which, at last report, had approximately 80 known cases of the infection, with two deaths, and a large number of other men under observation. This unit had been working in an area of infested streams.

This headquarters has initiated action to obtain rubber hip boots and knee boots for general engineer units under its control. Priority will be given to units being prepared for operations in known infested and suspected areas.